



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,152	08/01/2005	Katsuyuki Igarashi	S004-5557 (PCT)	2399

40627 7590 01/30/2007
ADAMS & WILKS
17 BATTERY PLACE
SUITE 1231
NEW YORK, NY 10004

EXAMINER

NGUYEN, LAUREN

ART UNIT	PAPER NUMBER
----------	--------------

2809

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/535,152

Applicant(s)

IGARASHI ET AL.

Examiner

Lauren Nguyen

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7 and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 04/19/2006
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Art Unit: 2112

DETAILED ACTION

Receipt is acknowledged of applicant's amendment filed on 05/16/2005.

Claims 6, 8-10 were canceled and claims 11-14 were added. Thus, claims 1-5, 7, and 11-14 are pending for examination.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 04/19/2006 was filed after the mailing date of the instant application on 08/01/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The disclosure is objected to because of the following informalities: On page 3, line 6, 'As' should be corrected to --as--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2112

5. **Claims 1-2** are rejected under 35 U.S.C. 102(e) as being anticipated by **Sandellus (EP Publication Number 1 416 314)**.

6. With respect to **claim 1**, as shown in figures 2a and 2b, **Sandellus** discloses a liquid crystal display device, comprising: a color filter substrate having a color filter formed thereon; a counter substrate opposed to the color filter substrate; a liquid crystal layer interposed between the color filter substrate and the counter substrate (5; see at least paragraph 0034, lines 1-3); and a reflective film (2) disposed between a colored layer (4) serving as the color filter and the liquid crystal layer and having an area smaller than an area of the colored layer (figures 2a and 2b).

7. With respect to **claim 2**, as shown in figures 2a and 2b, **Sandellus** discloses the reflective film (2) is formed on the colored layer (4).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sandellus (EP Publication Number 1 416 314)**.

10. With respect to **claim 12**, as shown in figures 2a and 2b, **Sandellus** discloses the area of the reflective film is less than 50% of the area of the colored layer (see at least paragraph 0024, lines 1-3). See MPEP § 2131.05.

In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.

Art Unit: 2112

Cir. 1990).

11. With respect to **claim 13**, as applied to **claim 12** above and shown in figures 2a and 2b, **Sandellus** discloses a transparent electrode formed on the filter substrate; and an opposite electrode opposite the transparent electrode formed on the counter substrate (see at least paragraph 0034, lines 1-3).

12. **Claims 3-5, 7, 11, and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sandellus** (EP Publication Number 1 416 314) in view of **Tanaka et al.** (U.S. Patent Number 6,618,107).

13. With respect to **claim 3**, as applied to **claim 2**, **Sandellus** discloses the limitations as shown in the rejection of **claim 2** above. **Sandellus** does not disclose a transparent insulating film disposed between the colored layer and the reflective film.

However, **Tanaka et al.**, in at least column 8, lines 62-65, figure 1, discloses a transparent insulating film (5) disposed between the colored layer (7) and the reflective film (4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Sandellus** with the teaching of **Tanaka et al.** because such modification would prevent the detachment or deterioration of the reflecting plate when it is adhered directly onto a glass substrate (see at least column 2, lines 1-4; column 8, lines 11-15) and provide an LCD device with improvement in reflectance and enhanced reflection film (see at least column 10, lines 54-56 and column 12, lines 48-53).

14. With respect to **claim 4**, as applied to **claim 3** and shown in figures 2a and 2b, **Sandellus** discloses the reflective film (2) is a metal reflective film (see at least column 4, paragraph 0026,

Art Unit: 2112

lines 31-34). **Sandellus** does not disclose the transparent insulating film is a silicon oxide or a titanium oxide.

However, **Tanaka et al.**, in at least column 10, line 6, figure 1, discloses the transparent insulating film (5) is a silicon oxide.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Sandellus** with the teaching of **Tanaka et al.** because such modification would prevent the reflecting film from deteriorating in the electrodeposition of the color filter (see at east column 10, lines 8-13).

15. With respect to **claim 5**, as applied to **claim 4** above and shown in figures 2a and 2b, **Sandellus** discloses the metal reflective film comprises aluminum or silver (see at least paragraph 0026, lines 7-10).

16. With respect to **claim 7**, as applied to **claim 1**, **Sandellus** discloses the limitations as shown in the rejection of **claim 1** above. **Sandellus** does not disclose a planarizing film formed disposed on the color filter, the reflective film being formed on the planarizing film.

However, **Tanaka et al.**, as shown figure 1, discloses a planarizing film (2 or 8) formed disposed on the color filter (7), the reflective film (4) being formed on the planarizing film.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Sandellus** with the teaching of **Tanaka et al.** because such modification would provide protection to the reflective layer and level its irregularities (see at least column 8, lines 54-55 and column 9, lines 1-4).

Art Unit: 2112

17. With respect to **claim 11**, as applied to **claim 2**, **Sandellus** discloses the limitations as shown in the rejection of **claim 2** above. **Sandellus** does not disclose a planarizing film formed on and covering the reflective film.

However, **Tanaka et al.**, as shown figure 1, discloses a planarizing film (2 or 8) formed on and covering the reflective film (4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Sandellus** with the teaching of **Tanaka et al.** because such modification would provide protection to the reflective layer and level its irregularities (see at least column 8, lines 54-55 and column 9, lines 1-4).

18. With respect to **claim 14**, as applied to **claim 1**, **Sandellus** discloses the limitations as shown in the rejection of **claim 1** above. **Sandellus** does not disclose the reflective film has a thickness of 0.1 to 0.2 μm .

However, **Tanaka et al.**, as shown figure 1, discloses the reflective film (4) has a thickness of 0.1 μm .

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Sandellus** with the teaching of **Tanaka et al.** because such modification would provide an LCD device with enhanced reflection (see at least column 11, line 1).

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Moon (U.S. Publication Number 2001/0020990) discloses a transfective liquid crystal display device. Sasaki et al. (U.S. Patent Number 6,219,120) discloses an LCD with

Art Unit: 2112

corrugated reflective surface. Kim et al. (U.S. Publication Number 2003/0071945) discloses a transfective LCD device. Liu et al. (U.S. Publication Number 2004/0041965) discloses a transflector with a high gain of light efficiency for LCD device.

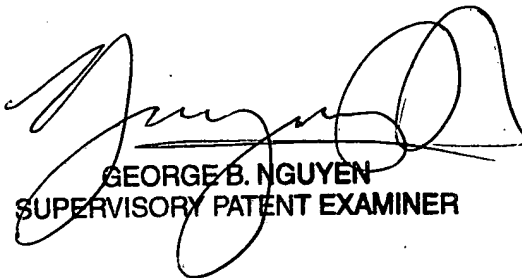
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Nguyen whose telephone number is (571) 270-1428. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Nguyen can be reached on (571) 272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren Nguyen

January 18, 2007



GEORGE B. NGUYEN
SUPERVISORY PATENT EXAMINER